8:45

CLINICAL SIGNIFICANCE OF LATE POTENTIAL IN PATIENTS WITH DILATED CARDIOMYOPATHY

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Usefulness of late potential(LP) by signal-averaged ECG has been established in patients with chronic ischemic heart disease. However, clinical significance of LP in patients with dilated cardiomyopathy(DCM) remains to be clarified. We studied the relationships between LP and clinical characteristics in 34 patients with DCM. In 20 patients we evaluated the inducibility of sustained ventricular tachycardia(VT) using programmed electrical stimulation.

Results: 1) LP was observed in 20 of the 34 patients. 2) The relationships between LP and clinical characteristics were as follows:

	LP(+)	LP(-)	p value
CHF	12/20	7/14	NS
Sp-VT	14/20	1/14	p<0.001
LVDd(mm)	62.3±9.3	64.4±10.1	NS
LVEF(%)	31.0±9.3	35.9±11.8	NS
death	1/20	0/14	NS
inducible VT	10/15	0/5	p<0.01

CHF:congestive heart failure, Sp-VT:spontaneous sustained VT, LVDd:diastolic dimension of LV by echocardiography, LVEF:ejection fraction of LV by left ventriculography

Conclusions:
No statistical differences were observed between LP(+) group and LP(-) group in the hemodynamic parameters. But, LP was an excellent indicator of the spontaneous incidence and inducibility of VT in patients with DCM.

9:00

INCIDENCE OF LATE POTENTIALS AFTER MYOCARDIAL INFARCTION: RELATIONSHIP TO PATENCY OF THE INFARCT RELATED ARTERY

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To assess the relationship between signal-averaged ECG (SAECG) derived late potentials (LP) and patency of the infarct-related artery (I-RA), SAECG's were recorded using a 40 Hz bidirectional highpass filter in 123 pts with acute myocardial infarction (AMI) within 48 hrs (mean 14.7 hrs)(R1), on day 6 (R2) and at mean 15 days (R3). Ninety-five (77%) pts received thrombolytic drugs (65 rt-PA, 30 streptokinase). All pts underwent coronary angiography at a mean of 6.5 days after AMI. The I-RA was patent in 90 (73%)(GpI) and occluded in 33 (27%)(GpII). The groups were similar in terms of age, sex, site of MI, previous MI's, delay to intensive care conditions, use of thrombolytics and LV ejection fraction. LP was taken as QRS duration >120 msec or terminal 40 msec root mean square < 20 μV or low amplitude segment > 40 msec. The incidence of LP was:

	R1	R2	R3
Gp I Patent	22/90 (24%)	33/90 (37%)	31/88 (35%)
Gp II Occluded	15/33 (45%)	21/32 (66%)	17/32 (53%)
	p < 0.05	p < 0.01	p = NS

LP's are significantly more common at R1 and R2 when the I-RA is occluded. For the 123 pts the specificity of LP for an occluded I-RA was 68/90 (76%) at R1 and at R2 the sensitivity was 21/32 (66%) and the negative predictive value 57/68 (84%). Thus the SAECG can help to determine I-RA patency after AMI.

9:15

USEFULNESS OF THE SIGNAL-AVERAGED ECG FOR PREDICTING INDUCIBLE VENTRICULAR TACHYCARDIA IN PATIENTS WITH UNEXPLAINED SYNCOPE

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Prior studies of the signal-averaged ECG (SAECG) for predicting inducible ventricular tachycardia (VT) at electrophysiologic study in Pts with unexplained syncope (SYNC) have been limited to small numbers of Pts and have not permitted assessment of the independent predictive value of the SAECG. The objective of this prospective study was to determine if the SAECG predicts electrically induced VT in Pts with SYNC, especially in Pts with prior MI or reduced LVEF. We enrolled 176 SYNC Pts without bundle branch block: 59 ± 16 yrs, 63% male, 28% prior MI, LVEF < 40% in 31%, and (+)SAECG in 48%. SAECG was filtered at 40-250 Hz, and abnormal if QRS > 110ms, or terminal voltage < 20uV or duration > 38ms. Sustained VT was induced in 24 Pts (14%). Results:

Variable	(+)VT	(-)VT	p-value
(+)SAECG	83%	43%	<0.001
Prior MI	63%	22%	<0.001
LVEF < 40%	63%	24%	<0.01

SAECG had excellent (-)predictive accuracy (PA), 96%, but (+)PA only 23%. In the presence of either prior MI or LVEF < 40% (n = 65), an abnormal SAECG was present in 89% of (+)VT Pts vs. 45% of (-)VT Pts (p<0.01). Specificity was improved by using the combination of (+) SAECG and history of prior MI yielding a (+)PA of 50% (odds ratio = 14). CONCLUSION: The SAECG is a useful screening test for inducible VT in Pts with SYNC, can stratify risk even in the presence of prior MI or reduced LVEF, but has many false (+) tests.

9:30

INFLUENCE OF CORONALY REPERFUSION ON THE TIME COURSE OF LATE POTENTIAL AND ITS RELATION TO LATE VENTRICULAR ARRHYTHMIAS AFTER MYOCARDIAL INFARCTION

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To study the influence of coronary reperfusion on the temporal changes of late potential(LP) and its relation to ventricular arrhythmias after myocardial infarction (MI), serial recordings of the signal averaged electrocardiogram (SAE) were performed in 84 patients (pts). 24 pts (group A) were successfully reperfused (TIMI grade>2) within 6 hours of onset of MI and 18 pts (group B) had unsuccessful reperfusion. Other 42 pts (group C) were treated conventionally. In all pts, SAE were recorded at 1,2,3,4 and 8 weeks after MI (40 Hz filter,noise level< 0.5 uv).The incidence of LP on the initial recordings was 29% (7 pts) in group A,17%(3pts) in group B and 26% (11pts) in group C. These LPs disappeared in 6 pts in group A, in 4 pts in group C untill 8 weeks after MI,while LP disappeared in none of 3 pts in group B(p<0.05).Newly developed LP at 2 or 3 weeks' recording were observed in 2 pts in each group . In 3 (one in group A and 2 in group B)of these pts,appearance of LP were transient. The prevalence of LP on one or more of the recordings within 8 weeks after MI was not significantly different in 3 groups (37% ,28% ,34%). During mean follow up of 11±5 months, arrhythmic events (AE:sustained VT and/or VF occured after the initial recordings) were observed in 4 pts who had continuous or newly developed LP. Conclusion :1)Disappearance of LP were observed more frequently in pts with successful reperfusion than pts with unsuccessful or reperfusion not attended. 2)LP continuously recorded or newly developed within 3 weeks after MI were associated with the occurrence of late arrhythmic events.